

### REMARKS

Claims 1–4, 6–10, and 12–21 are pending in this application, with Claims 5 and 11 canceled, and Claims 1, 13, 14, 19, and 21 amended. Applicants respectfully request reconsideration and review of the patent application in view of the amendments and the following remarks.

Before addressing the merits of the rejections, Applicants provide the following brief description of the invention. The invention is directed to a method and system for wirelessly communicating identifying information from model vehicles to a remote control device while multiple model vehicles are operational within a model vehicle system. In the field of model railroading, it is known to use a remote control device to communicate commands to model vehicles operating on a layout. Since there may be multiple model trains operating on the layout simultaneously, the remote control device includes an identifier (ID) with each such command so that only the appropriate model train will execute the command. There are many different types of model trains available on the market that may be controlled by the remote control, with many such model trains having distinctive functionality and other characteristics, and so there is a need in the art for a method for introducing the model train to the remote control so that the remote control knows to communicate with that particular model train. A known method for accomplishing this is for the operator to manually enter identifying information (such as the ID as well as a road name, tail number, etc.) into the remote control using a keypad provided on the remote control. Other methods may require a user to remove a model vehicle from the layout to configure an ID. These methods are undesirable for some model railroading enthusiasts.

Applicants' invention overcomes these drawbacks in the art by providing the model train and remote control with a system and method for wirelessly communicating the identifying information from the model vehicle to the remote control while the model vehicle remains operational within the model system layout. For example, in one embodiment, a model train that is operational in a track layout may transmit "its train ID,

engine number and engine road name, and optionally other data, periodically via an infrared (IR) transmission." *See specification*, ¶ 11. This way, the remote control can readily and easily recognize the model train, and thereafter use the ID in commands communicated to the various model trains operating on the layout. To ensure that the remote control only receives information from one model train at a time when multiple model vehicles are simultaneously operational, the invention provides that the ID is transmitted from the model train using only a narrow spatial field, e.g., using an infrared signal from a transmitter that is recessed within a cavity in the model vehicle to limit its angular field of view. A corresponding receiver in the remote control unit may similarly be recessed to further restrict the angular field of view from which the remote control may receive a vehicle ID. For example, Fig. 3 depicts a remote control for which the "receiver is mounted in a recess 234 which acts to limit the field of the reception to a narrow band, . . . [and] the standard viewing angle 248 of the IR receiver 249 is further limited by the use of a recess creating a further reduction in the viewing angle represented by 247." *See specification* ¶ 30; *Fig. 3*. Moreover, in a preferred embodiment of the invention, the transmission channel used to communicate the ID is different from that used to communicate subsequent commands. Applicants have amended Claims 1, 13, 14, 19, and 21 to clarify certain of these aspects of the invention. No new matter has been introduced by these amendments.

Examiner rejected Claims 1-4, 6-10, 12-17, 19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Yang (U.S. Pat. No. 6,133,847) and Nagata et al. (U.S. Pat. No. 6,970,096). Examiner also rejected Claims 18 and 20 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Yang, Nagata et al., and Young et al. (U.S. Pat. No. 5,749,547). Applicants respectfully traverse these rejections.

#### **1) Rejection of Claims 1-4, 6-10, 12-17, 19 and 21**

Yang discloses a configurable remote control device for controlling a television, VCR, or similar appliance. *See, e.g., Yang, col. 5, lines 27 - 34; Fig. 5*. According to

Yang, the remote control can download programming code from the appliance over a data link. *See Yang, col. 5, lines 36-37; Fig. 1.* Because Yang mentions that the same medium is not required for both downloading programming codes and transmitting control commands, Examiner concludes that Applicants' invention would have been obvious because the method of Yang permits "flexibility in the system since the controller could be used to control the vehicle in endless configurations." *Office Action, p. 3.*

Yang fails to address the problem of interference of IDs (or programming codes) that are transmitted from multiple devices operating within a system simultaneously. To make up for this deficiency, Examiner relies on Nagata et al., which describes a system in which a "drive" is removed from an operational layout and placed within a concave portion of a transmitter having a lid that can be closed to enclose the drive within the transmitter. *See Nagata, col. 2, lines 39-49; Fig. 4.* The transmitter then transmits a signal to the drive to change the identification information of the drive, while the lid prevents the "information-change data from leaking to the outside." *See Nagata, col. 2, lines 39-49.* Examiner concludes that the combination of these references with the admitted prior art render obvious Applicants' invention.

Applicants respectfully disagree for at least three reasons: (1) Yang is not analogous prior art, (2) there is no motivation to combine the cited references, and (3) the combination of references fails to disclose all of the elements of Applicants' invention.

***a) Yang is not analogous prior art.***

Yang is directed to the field of "universal remote controls" designed to operate televisions, VCRs, and similar appliances. A key difference between such appliance systems and the model vehicle systems to which Applicants' invention is directed is that model vehicle systems are dynamic, with trains or other accessories' frequently being added to or removed from the system. A remote control for a model vehicle system must therefore frequently be introduced to new vehicles and accessories while

minimizing the impact to other vehicles already in operation in the model layout. By contrast, a universal remote for a television and VCR must be initialized once and will seldom require reintroduction to the appliance. Thus, it is not inconvenient for a user to power down all other appliances in a system while initially programming the remote to communicate with a VCR, for example. In fact, Yang does not even address the question of receiving simultaneous identifying information from multiple appliances, precisely because an appliance system is so fundamentally different from a model vehicle layout. This also explains why Yang describes the remote control device's communicating with an appliance over a "bi-directional data link 150 that is established between the remote control and the appliance that is to be controlled" (*Yang, col. 3, lines 4-6; Fig. 1, element 150*): because interference between multiple devices is not a problem in Yang's system, a bidirectional link works well, and only in passing does Yang note that the same link is not required to be used for both functions. Thus, Yang is not in the same field of endeavor as Applicants' invention, and it is not directed at solving a problem that Applicants are attempting to solve. Therefore, Yang is not analogous prior art, and Examiner's reliance upon this reference is improper.

***b) There is no motivation to combine the cited references.***

Even if Yang were analogous prior art, Examiner has not articulated a motivation to combine Yang with Nagata et al. Neither of the cited references addresses the problem of receiving simultaneous communications from multiple devices operating in a model system layout as required, for example, by Claim 1 of the present application, reciting a "method for identifying one **of a plurality of devices** in a model vehicle system, comprising: positioning a remote control device near a first one of said devices **while said first device remains operational in the model vehicle system.**" Rather than **receiving** identifying information from multiple vehicles, the transmitter of Nagata et al. **transmits** to an isolated drive that has been removed from the system and enclosed within a concave portion of the transmitter. See *Nagata, col. 2, lines 39-49; Fig. 4*. Because the transmitter of Nagata et al. never **receives** information from

devices but only **transmits** to a single device at a time, there is no motivation to add an additional, separate receive channel that is spatially limited as required by Claim 1 of the present invention, which recites, "wherein said remote control device is only capable of receiving said ID for said first device when said remote control device is placed within a **narrow spatial field** emanating from said first device with a **limited viewing angle**, so that said ID is **not interfered with by transmissions from other devices**" Thus, there is no motivation to combine Nagata et al. with Yang, which at best discloses separate media for transmit and receive signals as an afterthought with no motivation nor articulation of any advantages that separate media might achieve. For at least this reason, the rejection is improper.

*c) The combination of cited references fails to disclose all limitations.*

Finally, the proposed combination of Yang and Nagata et al. with the admitted prior art fails to disclose all of the limitations of Applicants' invention. The combination at least fails to disclose: (1) a remote control "only capable of receiving said ID for said first device when said remote control device is placed within a **narrow spatial field** emanating from said first device with a **limited viewing angle**," and (2) receiving a vehicle identification code from a vehicle while it is operating in a model vehicle layout with other model vehicles.

In particular, Claim 1 recites "identifying one of a **plurality of devices** . . . while said **first device remains operational** in the model vehicle system," by placing a remote control "within a **narrow spatial field** emanating from said first device with a **limited viewing angle**." Yang fails even to recognize the problem of dynamically acquiring IDs from multiple devices that may be operating simultaneously. Presumably, this is because Yang's device is intended to be programmed once, when a television and VCR are first configured, and in such a system, changes to equipment are very rare and infrequent. Thus, Yang fails to disclose any method of identifying one of a plurality of devices while a first device remains operational in a system. Similarly, it fails to

disclose system transmitters and/or receivers designed to have a reduced viewing angle to limit their spatial field of view. Indeed, Yang's failure even to recognize this problem simply emphasizes that it is not analogous art.

Nagata et al. fails to make up for this deficiency. The "drives" of Nagata do not transmit identifying information to a remote control. Instead, the remote control transmits commands to configure an identification code within the drive. See *Nagata*, col. 2, lines 39-49; Fig. 4. Nagata recognizes the problem that this configuration command could be unintentionally received by multiple drives, but proposes a very different solution, comprising removing a drive from the system and placing it within an enclosure having a lid that can be closed to prevent the command information from leaking out. *Id.* Thus, Nagata et al. also fails to disclose a method by which identifying information may be obtained while a device remains operational in a system. It further fails to disclose a system that restricts a spatial field of view by reducing the viewing angle of a transmitter or receiver to a narrow beam. On the contrary, Figure 4 of Nagata et al. clearly shows a transmitter LED 23 mounted above the surface of the surrounding wall with an unrestricted angular field of view.

Thus, even if the teachings of Yang and Nagata et al. were properly combined, they would not disclose several limitations of Claim 1, as discussed above, and the rejection of Claim 1 should be withdrawn. Similarly, the rejections of dependent claims 4, 6-10, and 12 should be withdrawn, at least because they depend from Claim 1.

Claim 13 similarly recites a method comprising:

periodically transmitting from a first model train an ID for said first model train in a **limited field** infrared transmission having a **limited view angle**;

positioning a remote control device near said first model train **while said first model train operates in a model train system** so that only a transmission from said first model train is received by an infrared receiver in said remote control device;

For the same reasons articulated above with respect to Claim 1, the combination of Yang and Nagata et al. at least fails to disclose or suggest “a **limited field infrared transmission having a limited view angle**” and receiving a transmission “**while said first model train operates** in a model train system.” For at least this reason, the rejection of Claim 13 should be withdrawn.

Claim 14 discloses a model vehicle including:

a transmitter mounted in said vehicle for directing a transmission of an identifying signal (ID) that can be received by said remote control unit independent of said communication channel **while said vehicle is operating in a model vehicle system**; and

means for **limiting a view angle** of said transmission so that only a **narrow transmission** from a single vehicle is received by said remote control unit when positioned in a field of said transmission.

Again, for the same reasons articulated above with respect to Claims 1 and 13, the combination of Yang and Nagata et al. at least fails to disclose or suggest the “transmission of an identifying signal . . . while said vehicle is operating in a model vehicle system,” and a “means for limiting a view angle of said transmission.” For at least this reason, the rejection of Claim 14 should be withdrawn.

Inasmuch as Claims 15–18 depend from Claim 14, the rejection of those claims should be withdrawn for the same reason.

Claim 19 similarly discloses:

a receiver mounted in said remote control device, for receiving a transmission from said first model vehicle, separate from said communication channel, conveying an ID of said first model vehicle **while said first model vehicle remains operational** in a model vehicle system, wherein a **field of view of said receiver has a limited view angle**;

For the same reasons articulated above with respect to Claims 1, 13, and 14, the combination of Yang and Nagata et al. at least fails to disclose or suggest “conveying

an ID of said first model vehicle while said first model vehicle **remains operational** in a model vehicle system, wherein a field of view of said receiver has a **limited view angle**.” For at least this reason, the rejection of Claim 19 should be withdrawn. Similarly, the rejection of Claim 20 should be withdrawn at least because it depends from Claim 19.

Finally, Claim 21 similarly recites a “means for **limiting a view angle** of said transmission so that only a **narrow transmission** from the first model vehicle is received by a receiver positioned in said field of said transmission . . . while said first model vehicle **remains operational** within a model vehicle system.” Inasmuch as the combination of Yang and Nagata et al. fails to disclose or suggest at least these limitations, the rejection of Claim 21 should also be withdrawn.

## **2) Rejection of Claims 18 and 20**

Examiner adds Young et al. for its disclosure of a model train receiving communications over train tracks. However, Young et al. does nothing to remedy the deficiencies of Yang and Nagata et al. as discussed above. Inasmuch as both Claim 18 and Claim 20 depend from independent claims that are not rendered obvious by the cited prior art, as discussed above, this rejection should also be withdrawn.

In view of the foregoing, Applicants respectfully submit that Claims 1–4, 6–10, and 12–21 are in condition for allowance. Reconsideration and withdrawal of the rejections is respectfully requested, and a timely Notice of Allowability is solicited. If it would be helpful to placing this application in condition for allowance, Applicants encourage Examiner to contact the undersigned counsel and conduct a telephonic interview.



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The Commissioner is authorized to charge \$405. for request for continued examination (RCE) pursuant to 37 CFR § 1.17(e) and any shortage in the fees, including extension of time fees, to Deposit Account No. 50-0639.

Respectfully submitted,



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